

Large eddy simulation of wind loads on solar panels

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Purpose Wind loads is a major concern for roof-mounted solar panels and should be investigated for design.

Outline Wind pressure distributions and flow field characteristics around solar panels are investigated by large eddy simulation using OpenFOAM.

Result Both large-scale separated and reattached flow induced by roof edges and small-scale local vorticities near the solar panels determine the wind loads on solar panels.

Computing system: OCTOPUS

node-hour 920 points

memory used 60 GB

vector per 85 %

parallelize 2~4 nodes

